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PROFESSIONAL GRAPHICS SOLUTIONS

	CUSTOMER HAS ANY OF THESE GRAPHICS CARDS?		REPLACE WITH		☐ Competitor Product	☐ NVIDIA RTX™ / Quadro®
	COMPETITOR	OLDER NVIDIA GPUs	NVIDIA			

SPECIALTY

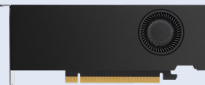| GP100	NVIDIA Quadro GV100	**NVIDIA QUADRO GV100** — VCQGV100-BLK

GV100 SHOWN

- NVIDIA Volta Architecture Based CUDA Cores
- Accelerated Double Precision (FP64) Performance
- NVIDIA NVLink® Support
- Graphics Synchronization with Quadro Sync II
- 32GB Error Correcting Code (ECC) Memory

ULTRA HIGH END

Competitor	Older NVIDIA GPUs	Replace With
WX9100	Quadro RTX 8000	NVIDIA RTX A6000
WX8200	Quadro RTX 6000	
	Quadro P6000	NVIDIA RTX A5500

NVIDIA RTX A6000 & NVIDIA RTX A5500
VCNRTXA6000-PB | VCNRTXA6000-SB | VCNRTXA6000-BLK | VCNRTXA6000-EDU
VCNRTXA5500-PB | VCNRTXA5500-SB | VCNRTXA5500-BLK | VCNRTXA5500-EDU

NVIDIA RTX A6000 SHOWN

- NVIDIA Ampere Architecture Based CUDA Cores
- Second-Generation RT Cores
- Third-Generation Tensor Cores
- Graphics Synchronization with Quadro Sync II
- **A6000:** 48GB GPU Error-Correcting Code (ECC) Memory
- **A5500:** 24GB GPU Error-Correcting Code (ECC) Memory
- Third-Generation NVIDIA NVLink

Competitor	Older NVIDIA GPUs	Replace With
W6800	Quadro RTX 5000	NVIDIA RTX A5000
	Quadro P5000	NVIDIA RTX A4500

NVIDIA RTX A5000 & NVIDIA RTX A4500
VCNRTXA5000-PB | VCNRTXA5000-SB | VCNRTXA5000-BLK | VCNRTXA5000-EDU
VCNRTXA4500-PB | VCNRTXA4500-SB | VCNRTXA4500-BLK | VCNRTXA4500-EDU

NVIDIA RTX A5000 SHOWN

- NVIDIA Ampere Architecture Based CUDA Cores
- Second-Generation RT Cores
- Third-Generation Tensor Cores
- Graphics Synchronization with Quadro Sync II
- **A5000:** 24GB GPU Error Correcting Code (ECC) Memory
- **A4500:** 20GB GPU Error Correcting Code (ECC) Memory
- Third-Generation NVIDIA NVLink

HIGH END

Competitor	Older NVIDIA GPUs	Replace With
	Quadro RTX 4000	NVIDIA RTX A4000
	Quadro P4000	

NVIDIA RTX A4000 — VCNRTXA4000-PB | VCNRTXA4000-SB | VCNRTXA4000-BLK

NVIDIA RTX A4000 SHOWN

- NVIDIA Ampere Architecture Based CUDA Cores
- Second-Generation RT Cores
- Third-Generation Tensor Cores
- 16GB GPU Error Correcting Code (ECC) Memory
- Slim Single Slot, Full Height Form Factor
- Graphics Synchronization with Quadro Sync II

MID RANGE

Competitor	Older NVIDIA GPUs	Replace With
W6600	Quadro P2200	NVIDIA RTX A2000 12GB / NVIDIA RTX A2000

NVIDIA RTX A2000 12GB & NVIDIA RTX A2000
VCNRTXA200012GB-PB | VCNRTXA200012GB-SB | VCNRTXA200012GB-BLK
VCNRTXA2000-PB | VCNRTXA2000-SB | VCNRTXA2000-BLK

NVIDIA RTX A2000 12GB SHOWN

- NVIDIA Ampere Architecture Based CUDA Cores
- Second-Generation RT Cores
- Third-Generation Tensor Cores
- 70W Max Power Consumption
- 6GB or 12GB GPU Error Correcting Code (ECC) Memory
- Dual Slot, Half Height Form Factor
- Full-height (ATX) bracket included

Competitor	Older NVIDIA GPUs	Replace With
WX5100	Quadro P2000	NVIDIA T1000 8GB

NVIDIA T1000 8GB — VCNT10008GB-PB | VCNT10008GB-SB | VCNT10008GB-BLK

- NVIDIA Turing Architecture Based CUDA Cores
- 8GB GPU Memory
- Low-Profile Single Slot Form Factor
- Full-height (ATX) bracket included
- 50W Max Power Consumption
- Up to 50% faster graphics performance compared to the previous generation

ENTRY

Competitor	Older NVIDIA GPUs	Replace With
W5700	Quadro P1000V2	NVIDIA T1000 8GB / NVIDIA T1000

NVIDIA T1000 8GB & NVIDIA T1000
VCNT10008GB-PB | VCNT10008GB-SB | VCNT10008GB-BLK | VCNT1000-PB | VCNT1000-SB | VCNT1000-BLK

NVIDIA T1000 8GB SHOWN

- Full-height (ATX) bracket included
- 50W Max Power Consumption
- Up to 50% faster graphics performance compared to the previous generation
- NVIDIA Turing Architecture Based CUDA Cores
- **T1000 8GB:** 8GB GPU Memory
- **T1000:** 4 GB GPU Memory
- Low-Profile Single Slot Form Factor

Competitor	Older NVIDIA GPUs	Replace With
W6400	Quadro P620V2	NVIDIA T1000 / NVIDIA T600

NVIDIA T600 — VCNT600-PB | VCNT600-SB | VCNT600-BLK

- NVIDIA Turing Architecture Based CUDA Cores
- 4GB GPU Memory
- Low-Profile Single Slot Form Factor
- 40W Max Power Consumption
- Up to 70% faster graphics performance compared to the previous generation

Competitor	Older NVIDIA GPUs	Replace With
W6400	Quadro P400V2	NVIDIA T400 4GB / NVIDIA T400
WX3200		
WX2100		

NVIDIA T400 4GB & NVIDIA T400
VCNT4004GB-PB | VCNT4004GB-SB | VCNT4004GB-BLK | VCNT400-PB | VCNT400-SB | VCNT400-BLK

NVIDIA T400 4GB SHOWN

- Low-Profile Single Slot Form Factor
- Full-height (ATX) bracket included
- 30W Max Power Consumption
- NVIDIA Turing Architecture Based CUDA Cores
- **T400 4GB:** 4GB GPU Memory
- **T400:** 2GB GPU Memory
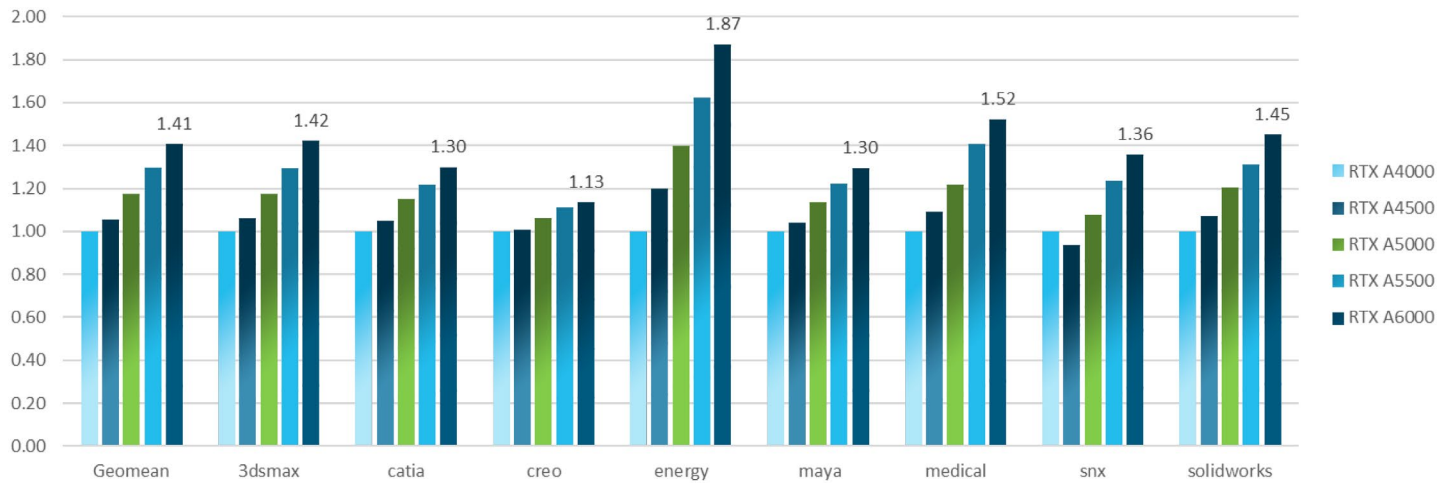
1 Display support will vary by system builder.
2 NVLink enables two GPUs to share GPU memory via an NVLink connector. Contact your software vendor to confirm application support for NVLink.

DESKTOP FAMILY GRAPHICS PERFORMANCE

SPECVIEWPERF 2020 4K RESOLUTION | RELATIVE PERFORMANCE

Tests run on workstation with 1x Xeon Gold 6154, 3GHz (3.7GHz Turbo), Win10 x 64, NVIDIA driver version 511.47, SPECviewperf 20.

DESKTOP FAMILY GRAPHICS SPECIFICATIONS

	RTX A6000	RTX A5500	RTX A5000	RTX A4500	RTX A4000
Architecture	Ampere	Ampere	Ampere	Ampere	Ampere
Chipset	GA102	GA102	GA102	GA102	GA104
Die Size	628.4mm²	628.4mm²	628.4mm²	628.4mm²	392mm²
CUDA Cores	10752	10240	8192	7168	6144
Tensor Cores	336	320	256	224	192
RT Cores	84	80	64	56	48
Single Precision (TFLOPS)	38.7	34.1	27.8	23.7	19.2
RT Core (TFLOPS)	75.6	66.6	54.2	46.2	37.4
Tensor Core (TFLOPS)	309.7	272.8	222.2	189.2	15344
GPU Memory	48GB ECC	24GB ECC	24GB ECC	20GB ECC	16GB ECC
Memory Type	GDDR6 ECC	GDDR6 ECC	GDDR6 ECC	GDDR6 ECC	GDDR6 ECC
Memory Interface	384-bit	384-bit	384-bit	320-bit	256-bit
Memory Bandwidth	768 GB/s	768 GB/s	768 GB/s	640 GB/s	448 GB/s
NVENC/NVDEC Chips	1x	2x	1x	2x	1x	2x	1x	2x	1x	1x
NVENC Max Streams	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted
NVLink	Supported	Supported	Supported	Supported	Not Supported
System Interface	PCIe Gen 4 x16	PCIe Gen 4 x16	PCIe Gen 4 x16	PCIe Gen 4 x16	PCIe Gen 4 x16
Power Consumption	300W	230W	230W	200W	140W

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DESKTOP FAMILY GRAPHICS PERFORMANCE

NVIDIA PROFESSIONAL GRAPHICS CARD RELATIVE PERFORMANCE
(RTX 4000 AS BASELINE)
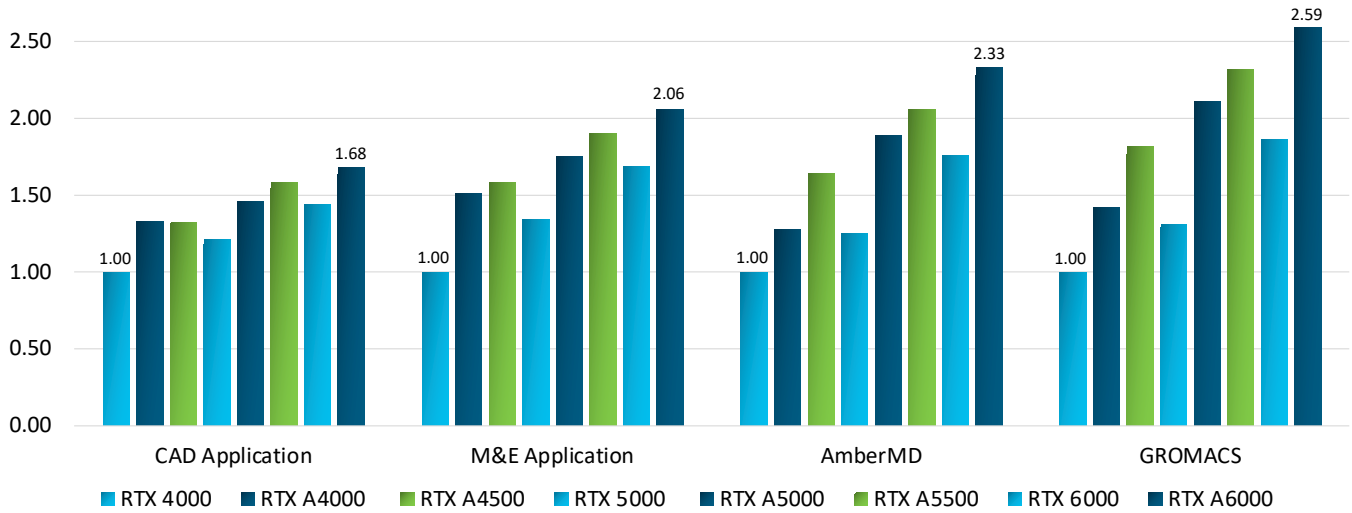
Legend: RTX 4000, RTX A4000, RTX A4500, RTX 5000, RTX A5000, RTX A5500, RTX 6000, RTX A6000

Tests run on workstation with Xeon Gold 6154, 3GHz (3.7GHz Turbo), NVIDIA driver version 511.47, SPECviewperf 2020 v3.0, Catia, Creo, and SNX 4K subtests. (CAD) 3DS Max and Maya 4K subtests. (M&E) Tests run on workstation with Xeon Gold 6154, 3GHz (3.7GHz Turbo), NVIDIA driver version 510.39.01, GROMACs STMV (h-bond), FP32 precision. (AmberMD, GROMACS)

NVIDIA PROFESSIONAL GRAPHICS CARD RELATIVE PERFORMANCE
(RTX 4000 AS BASELINE)

Legend: RTX 4000, RTX A4000, RTX A4500, RTX 5000, RTX A5000, RTX A5500, RTX 6000, RTX A6000
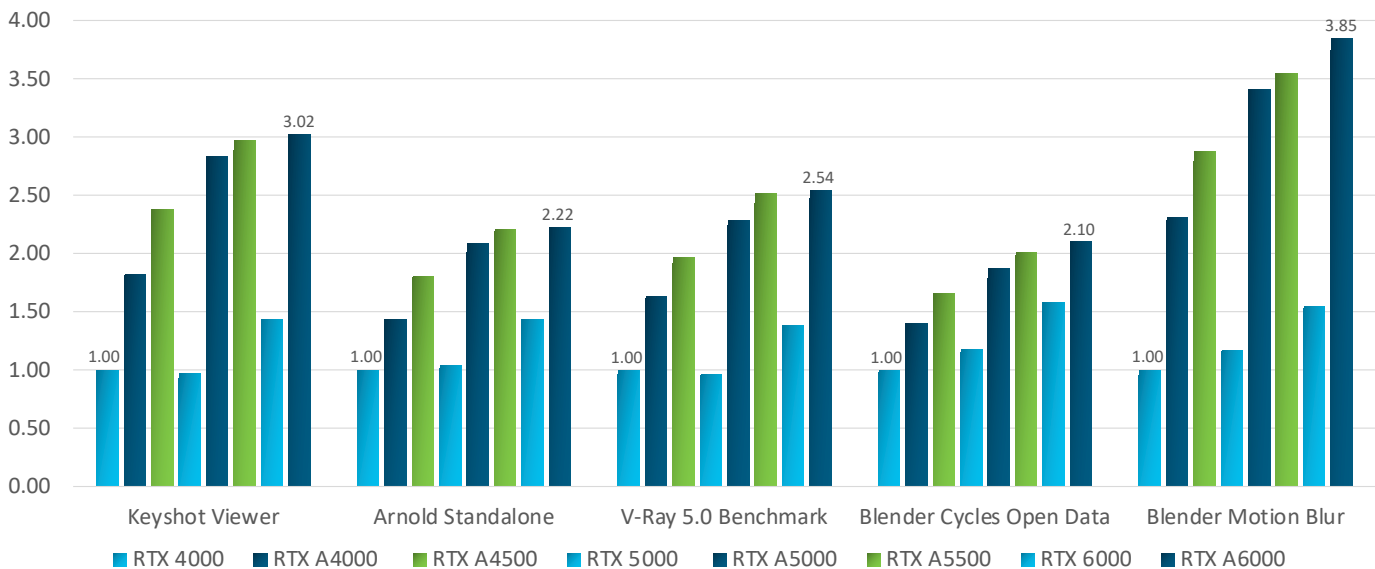
Tests run on workstation with Xeon Gold 6154, 3GHz (3.7GHz Turbo), NVIDIA driver version 511.47, Keyshot v10.0 at 1080p.(Keyshot) Arnold v7.0 at 1080p. (Arnold) V-Ray v5.00.2 at 1080p for Optix subtest. (V-Ray) Blender Cycles Open Data v3.0 and Blender Motion Blur v3.0 at 1080p for Optix subtest. (Blender)

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